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ABSTRACT

This study broadens the scope of priming research by testing whether media coverage of international affairs shapes the criteria which people use to judge foreign countries. In contrast to previous priming experiments that focused on the effects of television news stories, this study experimentally tests the power of print media to produce priming effects. In addition, it tests whether the inclusion of photographs can enhance the impact of newspaper articles on subsequent evaluations of foreign countries. The participants in this study were 199 undergraduate students from a large private university on the East Coast. The findings indicate that reading stories about terrorism that directly linked the issue to Iran primed participants to judge this nation on the basis of anti-terrorist attitudes. Similarly, reading stories that linked the war on drugs to Mexico and Colombia primed participants to evaluate these nations in terms of anti-drug attitudes. In contrast, stories that indirectly primed thoughts about terrorism or drugs had no effect on how participants subsequently judged these nations. The study also found that priming effects did not depend on the presence or absence of photographs. (Contains 40 references and 6 tables of data.) (Author/RS)

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PRIMING INTERNATIONAL AFFAIRS: HOW THE MEDIA INFLUENCE ATTITUDES TOWARD FOREIGN COUNTRIES

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Abstract

Priming International Affairs:
How The Media Influence Attitudes Toward Foreign Countries

This study broadens the scope of priming research by testing whether media coverage of international affairs shapes the criteria which people use to judge foreign countries. In contrast to previous priming experiments that focused on the effects of television news stories, this study experimentally tests the power of print media to produce priming effects. In addition, it tests whether the inclusion of photographs can enhance the impact of newspaper articles on subsequent evaluations of foreign countries. The participants in this study were 199 undergraduate students from a large private university on the East Coast. The findings indicate that reading stories about terrorism that directly linked the issue to Iran primed participants to judge this nation on the basis of anti-terrorist attitudes. Similarly, reading stories that linked the war on drugs to Mexico and Colombia primed participants to evaluate these nations in terms of anti-drug attitudes. In contrast, stories that indirectly primed thoughts about terrorism or drugs had no effect on how participants subsequently judged these nations. The study also found that priming effects did not depend on the presence or absence of photographs.

Key words: priming, print media, foreign affairs

Priming International Affairs:

How The Media Influence Attitudes Toward Foreign Countries

Most Americans heavily depend on the mass media for information about international affairs. It seems therefore reasonable to expect the media to play an important role in shaping mass opinion toward other nations. This study examines whether foreign affairs news coverage can influence how people think about foreign countries by priming related thoughts or considerations, which subsequently might be used to evaluate these countries. For example, people who read stories that describe a nation in terms of terrorist activity may be more likely to judge that nation on the basis of their attitudes about terrorism than those who do not read such stories.

Research on media priming has found strong empirical support for the priming hypothesis – the claim that news coverage influences which criteria people use to form political judgments (Iyengar et al., 1984; Iyengar & Kinder, 1987; Krosnick & Kinder, 1990). Thus far, however, research on priming has focused heavily on one arena of political judgment: evaluations of political candidates and public officials, particularly the president (e.g. Iyengar & Kinder, 1987; Krosnick & Kinder, 1990; Miller & Krosnick, 2000). This study attempts to broaden the scope of priming research by proposing a different dependent variable. Rather than assessing the impact of media priming on evaluations of political figures, this study experimentally tests the ability of the media to alter attitudes toward foreign countries by activating or priming associations between countries and related issues. In addition, the impact of two different prime cues are compared: direct prime cues, which explicitly prime associations between countries and issues; and indirect prime cues, which prime only the issues and not the targets of evaluation.

This study also attempts to close other gaps that exist in experimental priming research. Past studies on priming and political judgment have typically focused on the effects of television news (e.g. Iyengar & Kinder, 1987; Miller & Krosnick, 2000). This analysis, in contrast, tests the power of printed news to influence how people form political evaluations. Moreover, the use of printed news material allows us to test a new form of Iyengar and Kinder's (1987) vividness hypothesis – the proposition that vivid presentations enhance media effects – by examining whether the inclusion of vivid photographs enhances the impact of newspaper articles on subsequent evaluations.

Priming, the Mass Media, and Political Judgment

Priming, defined by Fiske and Taylor (1984) as the effects of prior context on the interpretation and retrieval of information, revolves around the role of long-term memory in the processing of new information. The notion of priming is built on the assumption that one stimulus can activate previously learned cognitive structures and influence interpretations of a second, ambiguous stimulus. An illustration of the effect of priming on memory retrieval is the natural tendency to interpret a word in terms of one's most recent encounter with it. If, for example, a person reads a newspaper article about a new computer virus and an ambiguous conversational reference to a virus occurs a few minutes later, the person will likely think of virus as a destructive computer program rather than as a microscopic organism.

The priming process works through the mechanism of cognitive accessibility (Higgins & King, 1981; Wyer & Srull, 1986, 1989). The more accessible a concept is within a person's memory, the more easily that person can call it to mind. A variety of factors determine a concept's accessibility, including its applicability to the current stimulus (Price & Tewksbury, 1995) and the frequency (Higgins, Bargh, & Lombardi, 1985) and recency with

which it has been used in the past (Higgins, Rhodes, & Jones, 1977; Herr, Sherman, & Fazio, 1983; Srull & Wyer, 1980).

Priming effects fit readily into the associative network model of memory. According to this model, memory consists of a hierarchically organized network of concepts (or nodes) that are linked through associative pathways (Anderson & Bower, 1973; Collins & Loftus, 1975). When a node is activated in memory – or primed – it becomes more accessible. The activation of concepts follows the principle of spreading activation (Collins & Loftus, 1975): exposure to a stimulus with a particular meaning activates related nodes; activation then spreads along the associative pathways to other nodes in the mental network. Activation may thus expand to indirectly associated thoughts or feelings – though the likelihood that this will happen should diminish as the path between the nodes becomes more indirect.

Research has demonstrated that priming influences a wide variety of cognitive processes, including word or letter recognition (Meyer & Schvaneveldt, 1976), retrieval of text in memory (Albrecht & O'Brien, 1990), formation of feelings (Berkowitz & Heimer, 1989), and judgments of life satisfaction (Strack, Martin, & Schwartz, 1988). Of greatest relevance here, however, is Iyengar and Kinder's (1987) seminal research on how media priming shapes political judgments. Through a series of experiments, Iyengar and Kinder demonstrated that television news coverage of an issue primed viewers to give that issue more weight in their overall evaluations of public officials and political candidates. The experiments showed, for example, that the impact of increased media exposure to national problems such as energy, defense, and inflation boosted the weight people assigned to these issues in their overall evaluations of President Jimmy Carter.

Iyengar and Kinder (1987) explain media priming effects by arguing that ordinary people, when facing complex political issues or events, do not base their judgments on all of

the relevant knowledge stored in their memories. Instead, people adopt a shortcut strategy, making evaluations based on pieces of information that are easily retrieved from memory (see also Krosnick & Brannon, 1993). Since most people rely on the mass media for information about political events (Iyengar & Ottati, 1994), the accessibility of such information is determined, in part, by which stories the media choose to cover (Iyengar & Kinder, 1987; Krosnick & Kinder, 1990). Extensive media coverage of an issue tends to make that issue more accessible in people's minds. This heightened accessibility, in turn, increases the likelihood that people will base subsequent evaluations on their thoughts about the issue. In short, the media not only influence the perceived salience of issues (agenda-setting); they also influence which issues serve as criteria for political judgment (priming).

While the priming literature is persuasive, its scope is limited in several important ways. One such limitation is the narrow focus on evaluations of political figures, particularly presidents and presidential candidates. While the logic of priming presumably applies across different types of political judgments, the empirical literature contains little evidence on whether the priming hypothesis holds true in other political domains. To be sure, evaluations of public figures play a particularly important role in shaping mass opinion and mass political behavior. Yet other sorts of political evaluations are important as well. Evaluations of foreign countries, for instance, are important for the role they play in shaping people's broader beliefs about foreign policy and defense spending (Peffley & Hurwitz, 1992; Bartels, 1995).

Despite the fact that Americans generally know little about specific foreign nations (Robinson, 1967; Smith, 1970; Delli Carpini & Keeter, 1996), a number of studies have found that world news not only can increase the public's knowledge about foreign countries, but also can significantly influence peoples' perceptions of nations (Albritton & Manheim,

1983; 1985; Manheim & Albritton, 1984; Perry, 1985; 1987). In fact, since knowledge about other countries is often limited, it is reasonable to assume that the media significantly influence the thoughts on which people rely in order to judge countries. Thus one goal of this study is to test whether the media can shape attitudes toward foreign countries by priming related thoughts or memories.

Another limitation of previous priming studies is their narrow focus on the effects of television news, particularly in the experimental research. While experimental priming studies have varied the type of television exposure (e.g. Schleuder, McCombs, & Wanta, 1991; Schleuder, White, & Cameron, 1993), we know relatively little about how priming works when other forms of media present prime cues (see Mendelsohn, 1994; Domke, Shah, & Wackman, 1998, for two exceptions). The print media are clearly a major source of political information, and generally provide news coverage that is more complex and that contains more information than television news (Chaffee & Frank, 1996; Chaffee & Kanihan, 1997; Graber, 1980). Moreover, the processing of visual and verbal messages from television differs significantly from information processed through reading text. Memory research has demonstrated, for example, that brain activity is greater for reading than watching television (Weinstein, Appel, & Weinstein, 1980). Information derived from the print media might be encoded, stored, and retrieved more efficiently than visual information from television. Such differences call into doubt the broader applicability of existing experimental studies on media priming. Accordingly, another goal of this study is to provide an experimental test of the power of the print media to produce priming effects on political judgments.

In addition to examining the priming effect of printed news stories on evaluations of foreign countries, two other hypotheses about media priming effects are tested. First, this study examines whether prime cues that indirectly prime perceptions of foreign affairs can

produce priming effects similar to those produced by more direct prime cues. According to the gradient hypothesis proposed by Miller and Krosnick (1996, p. 82; see also Iyengar & Kinder, 1987) "the impact of accessible attitudes may be great or negligible depending on their perceived relevance to the judgment at hand." Previous studies have tested this hypothesis by examining whether the power of priming varies across types of evaluation (e.g. integrity, competence, overall performance) as a function of relevance (e.g. Iyengar & Kinder, 1987). In contrast, this study tests whether the power of priming varies across types of prime cues (direct, indirect) as a function of relevance. For example, if stories about terrorism that explicitly mention Iran prime readers to judge Iran in terms of anti-terrorism attitudes, will stories about terrorism that do not explicitly mention Iran prime readers to do the same?

Second, this study tests a new form of Iyengar and Kinder's (1987, pp. 34-36) vividness hypothesis. The authors proposed that the impact of a news story on audience members' perceptions would increase as the story became more vivid. However, their experimental tests – which revolved around exposure to vivid television stories – did not produce much support for the hypothesis. This study examines a different type of "vividness bias" by including vivid photographs with some newspaper articles while excluding them from others. This allows a test of whether such photographs can enhance the power of print media stories to prime criteria for evaluating political objects.

Cases and Hypotheses

To test the priming effects of printed news stories, this study investigates whether prime cues embedded in newspaper stories shape how people evaluate four nations that have recently played important roles in U.S. foreign affairs: Libya, Iran, Mexico, and Colombia. Throughout the past two decades, the American public has been exposed to a steady stream of stories linking Libya and Iran to allegations of state terrorism. An examination of the press

coverage of the New York Times, for example, reveals that Iran was mentioned in 831 newspaper stories in 1999 and 94 of those stories, or 11.3 percent, contained references to terrorism. Libya was mentioned in 180 stories in 1999 and 49 of those stories, or 27.2 percent, mentioned terrorism. This tendency continued in January and February of 2000 – shortly before the experiments took place – 27 of 173 stories that mention Iran, or 15.6 percent, and 4 of 20 stories that mention Libya, or 20 percent, also included a reference to terrorism.[1]

Similarly, media coverage of Mexico and Colombia has often portrayed these nations as major battlefields in the war on drugs and their governments as important allies in this war. The New York Times mentioned Colombia in 530 stories in 1999 and 182 of those stories, or 34.3 percent, included a mention of illegal drugs. For Mexico, 312 of 2,516 stories in 1999, or 12.4 percent, included a mention of drugs. As before, this tendency persisted in the first two months of 2000; 31 of 92 stories that mentioned Colombia, or 33.6 percent, and 56 of 391 stories about Mexico, or 14.3 percent, also included a reference to drugs. Based on these findings regarding the links in the mass media between the issues of terrorism and drugs with the four tested countries here, it seems reasonable to assume that most media users have internalized these associative links in long-term memory.

Consequently, the central claim of this study is that readers who are exposed to media coverage about terrorism or drugs should be especially likely to rely on these particular issues to judge nations that can be linked to these issues. In other words, readers will be primed to use their attitudes about terrorism and drugs to form evaluations of the countries where these issues play an important role. Drawing on this argument, hypotheses are proposed for each set of nations. The first hypothesis focuses on how priming will influence the impact of anti-terrorist attitudes on evaluations of Libya and Iran. We expect that participants who read

stories about terrorism will be primed to base their evaluations of these two countries on their attitudes about terrorism. More specifically, since the connotations associated with the term "terrorism" are unambiguously negative, we expect to find that these news stories will magnify the negative impact of anti-terrorist attitudes on participants' evaluations of Libya and Iran. Hence, this will be a one-tailed hypothesis test.

H1: Anti-terrorist attitudes will be more likely to produce a negative effect on evaluations of Libya and Iran among those participants who read news stories about terrorism than among those who do not.

The second hypothesis concerns how priming will shape the impact of anti-drug attitudes on evaluations of Mexico and Colombia. As in Hypothesis 1, we expect to find that people who read stories about the fight against illegal drugs in Mexico and Colombia will be primed to base their evaluations of these nations on their level of support for the war on drugs. However, the direction of this effect could plausibly go either way. On the one hand, stories about drugs may prime negative associations between the nations and the war on drugs by casting them as drug sources. On the other hand, Colombia and Mexico were consistently portrayed in the newspaper coverage as taking an active and positive role in attempting to stem drug trafficking. Stories linking them with the war on drugs may prime positive associations instead. We therefore pose two competing hypotheses about the priming effects of stories about drugs on attitudes toward Mexico and Colombia. This will be a two-tailed hypothesis test.

H2A: Support for the war on drugs will be more likely to produce a positive effect on evaluations of Mexico and Colombia among those participants who read stories about the war on drugs than among those who do not.

H2B: Support for the war on drugs will be more likely to produce a negative effect on evaluations of Mexico and Colombia among those participants who read stories about the war on drugs than among those who do not.

Each hypothesis is qualified with several additional propositions. We propose that both direct and indirect prime cues will produce priming effects, though – in accordance with the gradient hypothesis – we expect the direct prime cues to produce stronger effects. We also propose that stories with photographs will produce stronger priming effects than stories without photographs, since their vividness may enhance the impact of the prime cues.

Method

The study employed a 2 x 2 x 2 factorial pretest/posttest experimental design to test the priming effects of foreign affairs news stories. The experimental treatment and posttest took place about two weeks after the pretest was administered. A total of 199 students enrolled in undergraduate classes at a large, private university on the East Coast completed the experiment in early 2000.

Both the pretest and the posttest contained questionnaire items that asked for the students' general evaluation of each nation and their assessments of U.S. foreign policy toward these nations. Participants were first asked to evaluate on a seven-point scale "how favorably or unfavorably" they felt toward each of the four target nations (1 = favorably, 7 = unfavorably). Similarly, participants were asked whether they "favor or oppose diplomatic

relations" *with Iran and then Libya* "*in the near future*" (*1 = strongly favor, 7 = strongly* oppose) and whether they "favor or oppose U.S. aid" to Mexico and then Colombia (1 = strongly favor, 7 = strongly oppose). The questions regarding the four nations were interspersed throughout various unrelated questions about U.S. politicians and political parties.

The pretest also contained a series of statements designed to assess students' general attitudes toward terrorism and illegal drugs. Attitudes toward terrorism were assessed by asking students to judge on a seven-point scale (ranging from "strongly agree" to "strongly disagree") whether (1) "The spread of terrorism is the greatest threat to our national security," (2) "The U.S. should do all it can to eliminate terrorism, even if that means war with terrorist nations," and (3) "People who resort to terrorism sometimes have legitimate grievances." Attitudes toward illegal drugs were assessed by asking students to evaluate on an identical seven-point scale whether (1) "It is not really a big problem if people occasionally use marijuana," (2) "The war on drugs should be a high priority in the United States," and (3) "The federal government should do more to end illegal drug use." In addition, the pretest, measured students' gender and foreign affairs knowledge.

Participants were randomly assigned to a control condition or one of eight experimental conditions. In the control condition, participants read three innocuous stories about computer use. The treatments were based on actual newspaper articles, though these articles were rewritten to be between 400 and 500 words long. Great care was taken in making the articles appear as real as possible, and they were presented with New York Times bylines. The participants were told that the project dealt with student opinions toward the news; to further disguise the purpose of the study, the posttest began with a set of unrelated

questions about how interesting, credible, and objective the articles were. Subsequent interviews revealed little awareness of the tested hypotheses.

The first treatment was whether or not the participant read stories containing prime cues for terrorism or drugs. Some participants were randomly assigned to read a packet containing articles about terrorism; others read a packet containing articles about the war on drugs. In a further manipulation, the primes for each issue were either direct or indirect. Participants in direct prime conditions read stories that explicitly linked an issue (drugs or terrorism) to two target countries (Iran and Libya or Mexico and Colombia). Participants in the indirect prime condition, on the other hand, read stories that only mentioned the issue, not the countries. For example, those in the direct prime condition for terrorism read one story that linked Libya to terrorism and another that linked Iran to terrorism. Meanwhile, those in the indirect prime condition read stories about domestic terrorism that did not mention these two nations.[2]

An additional treatment was whether or not the participant read stories that included photographs. Treatments with photographs included a single photo of approximately two by three inches with each article that contained a prime cue. The photos were stock photographs of rubble and twisted wreckage for the terrorism stories and drugs or drug use for the drug stories.

Findings

Tables 1 and 2 report the means and standard deviations for our measures of attitudes toward Iran, Libya, Mexico, and Colombia within each condition. On the whole, participants' evaluations of Mexico tended to be mildly favorable (less than 4), while their evaluations of the other nations tended to be neutral or unfavorable (4 or greater).

[Tables 1 and 2 about here]

To test the central claim of media priming, the study analyzed whether exposure to stories emphasizing terrorism or drugs altered the impact of attitudes about terrorism or drugs on evaluations of specific nations. The first part of this analysis examines the impact of the terrorism treatments on participants' evaluations of Libya and Iran. According to Hypothesis 1, participants who read news stories about terrorism should be more likely to evaluate Libya and Iran based on their attitudes toward terrorism compared to participants who do not read stories about terrorism. Following Iyengar and Kinder (1987), interaction terms were used in an ordinary least square regression model to estimate the impact of the four terrorism treatments (direct/indirect, with/without photo) on attitudes toward Libya and Iran:

> **Posttest Attitude toward Libya/Iran** = Anti-terrorism + Direct Terrorism Prime + (Anti-terrorism x Direct Terrorism Prime) + Indirect Terrorism Prime + (Anti-terrorism x Indirect Terrorism Prime) + Pretest Attitude toward Libya/Iran + Constant + e

The two dependent variables (posttest attitudes toward Libya and Iran) were created by combining the scores from the questions about how favorably the participants saw each nation and how strongly they favored diplomatic ties with them. The resulting scales were recoded into indices where 1 indicated the most favorable attitude possible and 0 indicated the most unfavorable. The items comprising each index were highly correlated (for Libya, $\underline{r}$ = .46 in the pretest and $\underline{r}$ = .53 in the posttest; for Iran, $\underline{r}$ = .39 in the pretest and $\underline{r}$ = .51; all significant at $\underline{p} < .001$).

The first independent variable, Anti-terrorism, was created by combining the responses to three questions tapping participants' general attitudes toward terrorism (see above). This index was then rescaled into a measure ranging from 0 to 1, where 1 indicated the strongest opposition to terrorism possible. The reliability of the scale was .50 (Cronbach's alpha). The effects of the priming treatments were coded as dummy variables. The variable Direct Terrorism Prime was coded 1 if participants read stories about terrorism that explicitly linked terrorism to Libya and Iran and coded 0 otherwise; likewise, the variable Indirect Terrorism Prime was coded 1 if participants read stories about domestic terrorism and coded 0 otherwise. Terrorism Photo was coded 1 if participants read stories accompanied by photos and coded 0 otherwise.

The regression model above controls for the impact the pretest attitudes and the main effects of the direct and indirect primes; it also captures the baseline effect of anti-terrorism attitudes. The crucial terms in the model, however, are the interaction terms, created by multiplying participants' Anti-terrorism score with the Direct Terrorism Prime and Indirect Terrorism Prime conditions. The first parameter captures the degree to which the impact of anti-terrorism depended on whether or not participants read the stories that explicitly linked Libya and Iran to terrorism; the second captures the degree to which the impact of anti-terrorism depended on whether or not participants read the stories about domestic terrorism. Statistically significant and negatively signed coefficients for these variables would indicate that exposure to priming altered the effects of anti-terrorist attitudes on evaluations of Libya and Iran (Iyengar & Kinder, 1987, p. 144).

Overall, partial support was found for Hypothesis 1. As Table 3 shows, only exposure to news stories that contained direct references to Iranian terrorism increased the impact of anti-terrorist attitudes on participants' evaluations of Iran. As predicted, the interaction effect

between the direct prime cue and attitudes toward terrorism is negative (b = -.28) and significant at p < .10 level (a reasonable threshold, given the sample size). For consistency and readability, both tables are drafted with more stringent two-tailed tests. However, a one-tailed hypothesis test would suggest even greater support for hypothesis 1. The interaction effect between the direct prime cue and attitudes toward terrorism would be significant at p < .05 rather than p < .10. Moreover, this effect is also larger than any other effect in the model except for the impact of the pretest attitudes. On the other hand, exposure to the indirect prime cue did not affect participants' evaluations of Iran. Similarly, neither exposure to the direct or indirect prime cues altered the impact of anti-terrorism on participants' evaluations of Libya.

Table 4 further illustrates the impact of the direct prime cues on how participants evaluated Iran and Libya. The findings clearly indicate that anti-terrorism attitudes had a stronger effect on evaluations of Iran among participants who received the direct prime (b = -.38) than among participants who did not receive these prime cues (b = -.10). As predicted, the difference between the two groups is negative and statistically significant (p < .10). In other words, exposure to news stories linking terrorism to Iran increased the relative weight of anti-terrorism attitudes in participants' judgments of these two countries. However, the same did not hold true in the case of Libya: here, the effect of anti-terrorist attitudes did not significantly differ between participants who received the direct prime and those who did not. Thus the findings support the basic priming hypothesis, however, only for one of the two tested countries, and only when the prime cue was explicit.

[Table 3 and 4 about here]

Another regression model, similar to the regression model above, tested whether the presence of photographs might enhance the impact of the prime cues. The analysis examined the interactions of photos depicting acts of terrorism with the (text-based) direct and indirect prime cues, in addition to three-way interactions between anti-terrorism terrorism, terrorism photos, and the priming conditions. Overall, no evidence was found that the impact of anti-terrorism attitudes varied significantly across the photograph and non-photograph conditions. Put simply, the inclusion or exclusion of vivid photographs did not seem to matter.

The second part of this analysis tests Hypothesis 2A and 2B, which state that participants who read news stories about drugs should be more likely to evaluate Mexico and Colombia in terms of support for the war on drugs than participants who do not read stories about drugs. The following model estimates the impact of the four drug treatments (direct/indirect, with/without photo) on attitudes toward Mexico and Colombia:

Posttest Attitude toward Mexico/Colombia = Anti-drugs + Direct Drugs Prime + (Anti-drugs x Direct Drugs Prime) + Indirect Drugs Prime + (Anti-drugs x Indirect Drugs Prime) + Pretest Attitude toward Mexico/Colombia + Constant + e

The dependent variables in this model (posttest attitudes toward Mexico and Colombia) were created by combining the scores from the questions about how favorably the participants saw each nation and how strongly they favored U.S. aid to each country. Again, the resulting indices were rescaled so that 1 indicated the most favorable attitude possible and 0 indicated the most unfavorable. The correlations between the items in each index were more modest here (for Mexico, $r = .31$ in the pretest and $r = .24$ in the posttest; for Colombia, $r = .40$ in the pretest and $r = .29$ in the posttest; all significant at $p < .001$).

As before, the independent variables in our models reflected the priming treatments and were coded as dummy variables. The variable Direct Drug Prime was coded 1 if participants read stories that linked drugs to Mexico and Colombia and coded 0 otherwise; similarly, the variable Indirect Drug Prime was coded 1 if participants read stories about illegal drugs in the United States and coded 0 otherwise. The variable Drug Photo was coded 1 if participants read stories accompanied by photos and coded 0 otherwise. The Anti-drugs index was created by summing the scores to three questions tapping participants' general attitudes toward illegal drug use (see above). This measure ranged from 0 to 1, where 1 indicated the maximum possible support for the war on drugs. The reliability of the scale was .81 (Cronbach's alpha).

Partial support is found for Hypothesis 2A. As Table 5 shows, the interactions between anti-drug attitudes and the direct prime cues were positive and reached statistical significance. In each model, the magnitude of this interaction was larger than the coefficient for any other variable except the pretest attitudes. This indicates that exposure to news stories that directly linked the war on drugs with the two target countries indeed increased the weight of this issues in participants overall evaluations of Mexico ($b = .21$; $p < .05$) and Colombia ($b = .24$; $p < .05$). However, stories that stressed only domestic drug problems, rather than directly linking the drug issue to the two target countries, failed to prime participants to think about Mexico and Colombia in terms of the war on drugs.

Table 6 again provides a closer look at the priming effects produced by the stories that explicitly linked Mexico and Colombia to the war on drugs. As predicted, among participants who received the direct prime cues, support for the war on drugs did produce more favorable evaluations of Mexico ($b = .11$) and Colombia ($b = .24$). However, among participants who did not receive the direct prime cues, support for the war on drugs did not translate into

positive evaluations of Mexico ($\underline{b}$ = -.10) or Colombia ($\underline{b}$ = .001). For both countries, the differences between the effects were significant ($\underline{p} < .05$).

No support was found for hypothesis 2B. The stories primed positive, not negative, associations between Mexico and Colombia.

[Table 5 and 6 about here]

Another analysis tested the interactions of photos depicting drugs with the (text-based) direct and indirect prime cues, in addition to three-way interactions between terrorism, terrorism photos, and the priming conditions. Again, the presence of photographs did not enhance the effect of the prime cues related to the war on drugs. Thus this study does not provide any evidence for the claim that photographs could produce a "vividness bias."

Conclusion

Taken as a whole, the findings presented here show that foreign affairs news can influence how people think about foreign nations. In three out of four cases, evidence for the priming effect of printed news stories was found. Reading stories that linked Iran to terrorism primed participants to judge Iran in terms of their attitudes about terrorism; similarly, reading stories that linked Mexico and Colombia to the war on drugs primed participants to judge both countries in terms of their attitudes about the war on drugs. When primed, this support for the war on drugs produced positive effects, which may be due to the generally positive light in which the prime stories cast Mexico and Colombia. Stories that cast these nations in a different light, such as being in league with drug traffickers, might well have produced different effects. Future studies must carefully consider the content of the media primes.

What also became clear is that for priming effects to emerge, news stories have to be highly relevant to the evaluation task. While the indirect prime cues in this study may well have activated thoughts about terrorism and drugs, this activation did not spread far enough to influence participants' evaluations of the four countries. Thus while foreign affairs news can influence the weight of certain issues in peoples' judgments of foreign countries, the semantic links between issues and countries need to be fairly explicit within each story to produce priming effects.

Two other results here merit attention. First, while much of the prior research on priming has dealt with the effects of television priming, this study indicates that priming effects are not limited to one medium. Despite the disadvantages of printed news stories over television news, such as the lack of emotional and visual impact, printed news stories can influence media users to judge foreign nations based on issues that are frequently mentioned. While these findings support the basic premise of media priming, it should be noted that television coverage of international affairs might not necessarily produce the same types of priming effects as print coverage of international affairs. Because of the technical differences between televised and printed news, the same news item is likely to have different priming effects on media consumers depending on which medium is used. Therefore, future studies should test priming effects across more than one medium at once.

Second, this study found no evidence that the priming effect of the semantic content of printed news stories can be increased by the inclusion of "vivid" photographs. Apparently, in media priming a picture is not necessarily "worth a thousand words": printed news stories about terrorism and illegal drugs did not produce stronger priming effects when accompanied by issue-related photographs. This seems to indicate that the visual impact of newspaper stories is less important in the priming process than the effects of their semantic content.

The findings of this study are limited in several ways. It is obvious that associations between issues and nations may be stronger for some issues and nations and weaker for others, depending on how familiar these associations are to the public and how frequently the media prime them. Since the foreign affairs knowledge of the average American is fairly limited, priming associations between issues and foreign nations may be a relatively difficult task – and may thus require rather explicit links. The complexity of testing the priming effect unfortunately limited the number of nations that could be included in this experimental study. Moreover, the absence of indirect priming or vividness effects in this study also might be due to the statistical power afforded by the sample size or the dependent variables, which might not have captured the impact of media priming very well.

Finally, a few cautious notes about the broader applicability of the results should be added. The participants in this experiment read the treatments in the context of an experiment; hence they may have behaved differently than they would have in a more natural setting. Still, great care was taken to craft realistic treatments and to disguise the purpose of this study. Another concern about external validity of the results presented here is related to the fact that participants in this experiment were undergraduate students and not typical American citizens. However, while students might differ in how they think about foreign nations compared to the general public, this study focuses on the psychological process by which citizens form these evaluations. This psychological process – the power of the mass media to prime certain thoughts and considerations – should not differ significantly in a student sample from what would happen in the general public.

In addition to the directions we have outlined above, we suggest that future studies focus on other issues and other nations. For example, recent media coverage of Iran has contained a new theme – the potential for democratic reform. Stories that emphasized this

theme might produce different sorts of priming effects than our terrorism-themed stories. Similarly, researchers might also examine how priming trade and immigration issues influences the way in which Americans evaluate Mexico. We might gain a richer understanding of media priming effects by examining the impact of stories about other nations frequently in the news: China, Russia, Israel, Iraq, and North Korea, to name a few. The present study represents one step toward this richer understanding.

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Table 1. Pretest and Posttest Attitudes Toward Libya and Iran, by Experimental Condition

	Libya				Iran			
	Overall Unfavorability		Opposition to Diplomatic Ties		Overall Unfavorability		Opposition to Diplomatic Ties	
Condition	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Direct prime-no photo	4.71	5.33	4.71	4.71	5.10	5.29	4.05	4.52
N = 21	(.90)	(1.06)	(1.62)	(1.71)	(1.00)	(1.23)	(1.77)	(1.75)
Direct prime-photo	4.90	5.43	4.14	4.76	5.10	5.38	4.05	4.52
N = 21	(1.14)	(1.03)	(1.35)	(1.45)	(.94)	(1.02)	(1.69)	(1.81)
Indirect prime-no photo	4.48	4.57	3.91	3.83	4.52	4.59	3.74	3.74
N = 23	(1.24)	(1.08)	(1.24)	(1.19)	(1.12)	(1.18)	(1.48)	(1.25)
Indirect prime-photo	4.55	4.70	4.26	4.15	4.70	5.05	3.95	4.35
N = 20	(1.05)	(1.08)	(1.52)	(1.76)	(1.42)	(1.36)	(1.76)	(1.95)
Control	4.72	4.81	4.14	4.27	5.09	4.95	3.96	4.08
N = 114	(1.11)	(1.26)	(1.58)	(1.47)	(1.23)	(1.25)	(1.70)	(1.57)
Total	4.69	4.89	4.18	4.31	4.98	5.00	3.95	4.16
N = 199	(1.20)	(1.20)	(1.52)	(1.51)	(1.19)	(3.95)	(1.68)	(1.63)

Note: Table entries are means within conditions. Standard deviations are in parentheses.

Table 2. Pretest and Posttest Attitudes Toward Mexico and Colombia, by Experimental Condition

	Mexico				Colombia			
	Overall Unfavorability		Opposition to US Aid		Overall Unfavorability		Opposition to US Aid	
Condition	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Direct prime-no photo	3.90	3.95	2.70	3.45	4.60	4.55	3.70	3.50
N = 20	(1.07)	(1.15)	(1.38)	(1.73)	(1.31)	(1.39)	(1.53)	(1.67)
Direct prime-photo	3.32	3.63	3.36	3.45	4.09	4.45	4.14	4.09
N = 22	(1.36)	(1.33)	(1.71)	(1.57)	(1.31)	(1.26)	(1.52)	(1.41)
Indirect prime-no photo	3.40	3.56	3.12	3.20	4.24	4.40	3.84	4.08
N = 25	(1.22)	(1.26)	(1.36)	(1.50)	(1.39)	(1.38)	(1.34)	(1.47)
Indirect prime-photo	3.71	3.52	3.00	3.67	4.62	4.62	4.14	4.29
N = 21	(1.23)	(1.08)	(1.18)	(1.11)	(.97)	(.86)	(.79)	(1.35)
Control	3.74	3.81	2.96	3.10	4.45	4.59	3.98	4.20
N = 111	(.97)	(1.04)	(1.14)	(1.21)	(1.06)	(1.19)	(1.38)	(1.36)
Total	3.66	3.74	3.01	3.25	4.42	4.55	3.97	4.11
N = 199	(1.09)	(1.11)	(1.27)	(1.33)	(1.15)	(1.21)	(1.35)	(1.41)

Note: Table entries are means within conditions. Standard deviations are in parentheses.

Table 3: The Impact of Terrorism Primes and Attitudes about Terrorism on Evaluations of Libya and Iran

Independent variable	Libya		Iran	
Anti-terrorist attitudes	-.13†	(.07)	-.10	(.08)
Direct terrorism prime	-.11	(.08)	.07	(.09)
Anti-terrorist attitudes x Direct terrorism prime	.09	(.15)	-.28†	(.16)
Indirect terrorism prime	-.01	(.07)	-.003	(.07)
Anti-terrorist attitudes x Indirect terrorism prime	.07	(.12)	-.04	(.14)
Pretest attitude	.69**	(.06)	.62**	(.06)
Constant	.19	(.05)	.21	(.06)
R Squared	.52		.46	
N	193		194	

Notes: Table entries are unstandardized regression coefficients.
Standard errors are in parentheses.
** $p < .01$, * $p < .05$, † $p < .10$

Table 4: Impact of Anti-Terrorism Attitudes on Posttest Evaluations Libya and Iran as a Function of Direct Priming

Nation	Baseline	Direct prime	Difference
Libya (N = 193)	-.13	-.04	.09
Iran (N = 194)	-.10	-.38	-.24†

Notes: Table entries are unstandardized OLS regression coefficients
** $p < .01$, * $p < .05$, † $p < .10$

Table 5: The Impact of Drug Primes and Attitudes about Drugs on Evaluations of Mexico and Colombia

Independent variable	Mexico		Colombia	
Anti-drug attitudes	-.10	(.05)	.001	(.06)
Direct drugs prime	-.14*	(.05)	-.09	(.06)
Anti-drugs attitudes x Direct drugs prime	.21*	(.15)	.24*	(.10)
Indirect drugs prime	-.03	(.07)	.04	(.06)
Anti-drugs attitudes x Indirect drugs prime	.02	(.12)	-.08	(.11)
Pretest attitude	.61**	(.06)	.52**	(.06)
Constant	.28	(.04)	.19	(.05)
R Squared	.39		.30	
N	194		195	

Notes: Table entries are unstandardized regression coefficients.
Standard errors are in parentheses.
** $p < .01$, * $p < .05$

Table 6: Impact of Anti-Drug Attitudes on Posttest Evaluations of Mexico and Colombia as a Function of Direct Priming

Nation	Baseline	Direct prime	Difference
Mexico (N = 194)	-.10	.11	.21*
Colombia (N = 195)	.001	.24	.24*

Note: Table entries are unstandardized OLS regression coefficients
* $p < .05$

Endnotes

[1] The content analysis of the New York Times was conducted using keyword searches of the Lexis/Nexis database and included both full-length stories and news briefs. The search terms used were "drugs" with Colombia and Mexico, and "terrorism" with Libya and Iran. A careful review of the stories showed that nearly all depicted the associations between illegal drugs, terrorism and the nations that we had expected to find. The only exception to this was several stories involving the taking of performance-enhancing drugs by athletes. Only a handful of such stories appeared, and for ease of analysis they were ignored.

[2] It should be noted that for evaluations of Libya and Iran, participants who read stories about drugs (non-country specific issue) or computer use (filler story) were combined into the control group. Similarly, for evaluations of Mexico and Colombia, participants who read

stories about terrorism or computer use were treated as the control group. Furthermore, the initial models included controls for gender and foreign affairs knowledge. Since these variables never approached statistical significance and their inclusion did not alter the findings, they were subsequently excluded from the regression models.